

# Rail Freight and Economic Development



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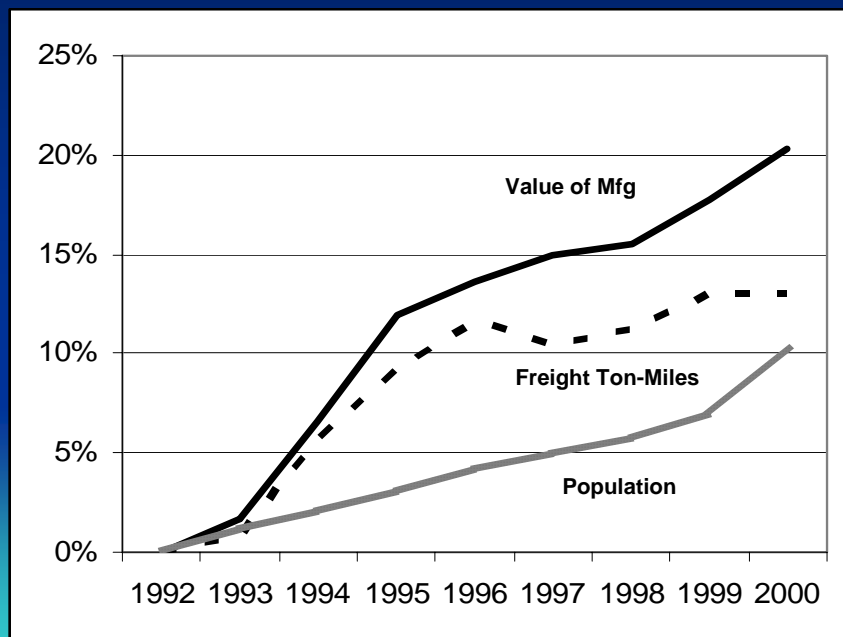
***[www.edrgroup.com](http://www.edrgroup.com)***

## Three Themes

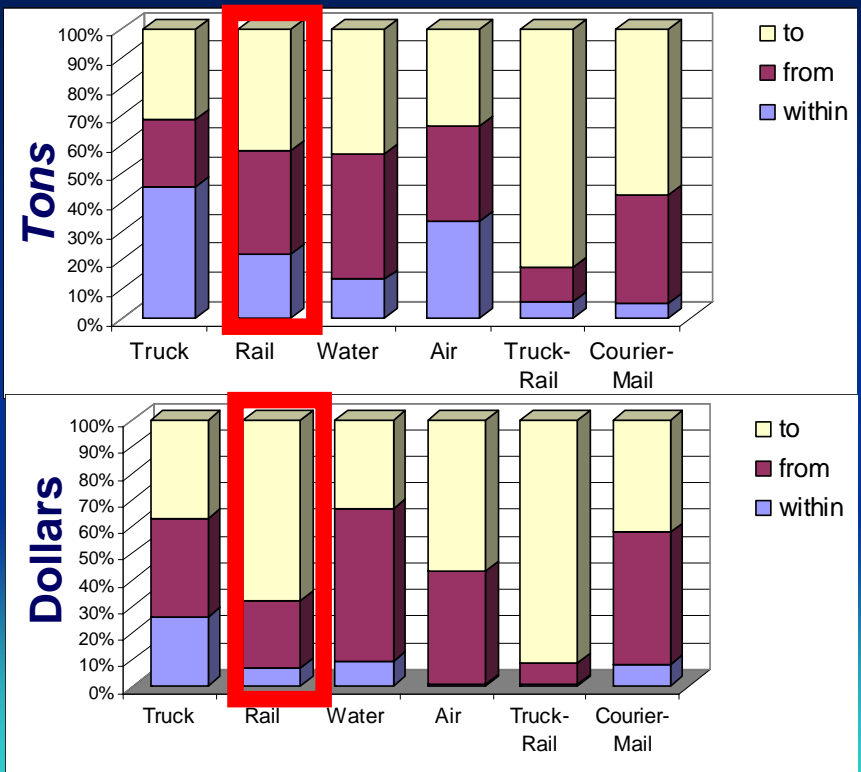
1. Underlying Trends: *changing due to national & global economic markets.*
2. Intermodal Rail Freight Projects: *reducing costs & expanding services to improve competitiveness.*
3. Economic Development: *depends on market access & cost competitiveness.*

# 1. UNDERLYING TRENDS

*Freight Growing Faster than Population*



# PA -- Freight O-D by Mode

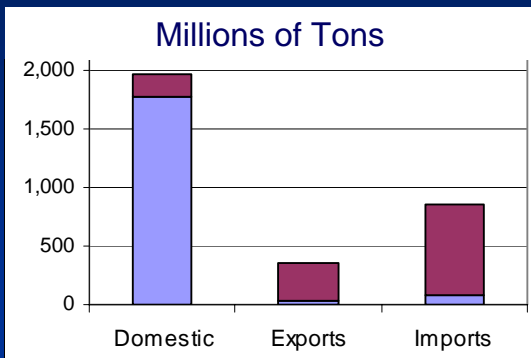


Rail Freight Imbalance:

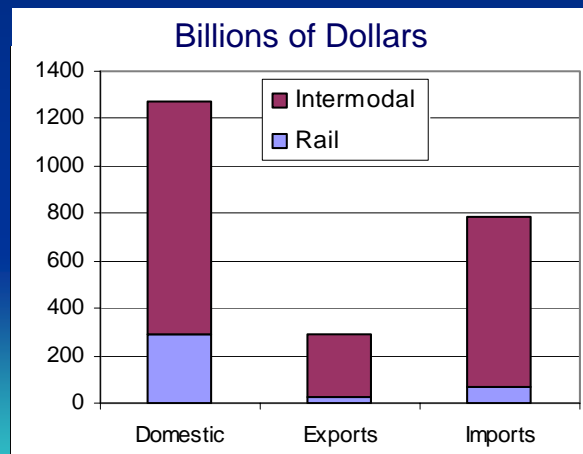
Ratio:  
 $\frac{\text{outgoing}}{\text{incoming}}$

Tons = 0.86  
 \$Val = 0.38

# Intermodal Importance (US)



*Intermodal accounts for a small part of the tonnage, but a large part of the value moving by rail.*

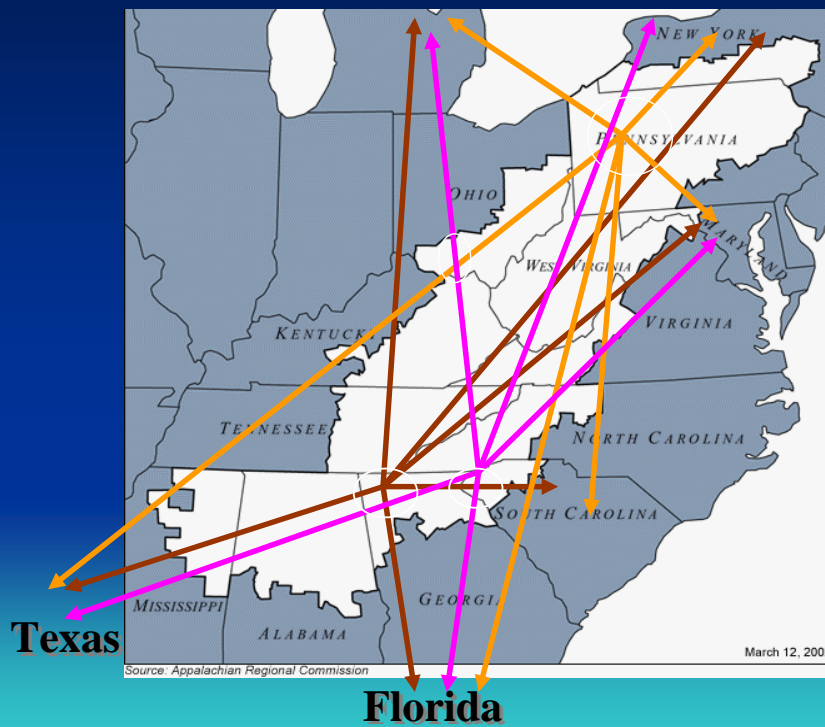


*COFC: 83% of all Intermodal Imports + Exports > Domestic by 2035*

# PA -- Rail Freight Flows



# Appalachian Exports



## **FOOD PROCESSING MACHINERY**

### Origin:

- PA
- GA
- SC
- OH

### Key Ports:

- Laredo TX
- New York NY
- Detroit MI

## PA -- NAFTA Trade via Rail

**PA to Canada \$758 million (+83% from 2000)**

**Canada to PA \$2.698 Billion (+85% from 2000)**

**PA to Mexico \$311 million (+44% from 2000)**

**Mexico to PA \$104 million (-21% from 2000)**



International Trade Administration 2006



## PA -- Exports to Canada by Rail

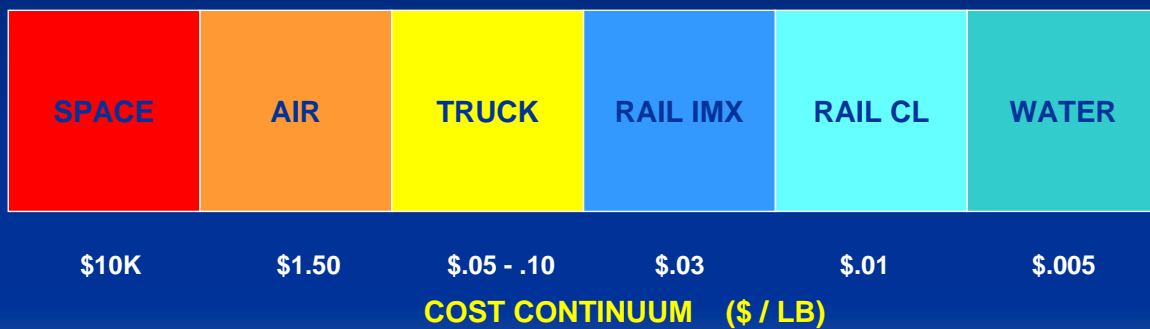
- Locomotives & Traffic Signals
- Organic Chemicals
- Iron & Steel and Products
- Plastics
- Mineral Fuels, Oils & Waxes
- Wood and Wood Articles
- Boilers, Machinery and Parts
- Chemical Products

*Contrast to Domestic Rail Flows that feature Coal, Petroleum, Pulp & Paper*

## 2. RAIL FREIGHT ROLES & PROJECTS

### *Modal Spectrum: Service & Cost Tradeoffs*

HIGHER ← **SERVICE CONTINUUM (Speed, etc.)** → LOWER



***Intermodal Strong in the 750+ mile range.  
Can it penetrate the 200+ mile markets?***

# Rail Freight to Reduce Hwy Traffic

## NCHRP Guide:

- Converging interests: private carriers, public agencies
- Motor carriers (facing labor shortages, truck delays, rising fuel prices) see rail freight as a positive option.
- Reducing congestion and road/rail conflicts can enhance public safety & economic development
- Guide for evaluation & public-private partnerships



# Successful Short-Haul

## 170 Miles Seattle - Portland Northwest Container Services, Inc.

- Daily dedicated service
- 60,000 containers/year
- Private terminals & equipment
- Private, purchased train



### Keys to Success:

- Single-end dray
- Stack economics
- Economic geography
- Turnkey set of services

## **Expanding Regional Capacity**

### **Regional Rail-Hwy Access Strategies**

- Vancouver Gateway System
- Chicago CREATE

### **Inland Ports and Feeder Systems**

- Netherlands: European Container Port Venlo
- Virginia Inland Port
- Nilai Inland Port (Malaysia)
- NY: Port Inland Distribution Network

### **Rail to Satellite Facilities**

- Betuwe Line - Netherlands
- Alameda Corridor - California

# Example: Vancouver BC International Trade Gateway



Ferry Terminals

Burrard Inlet Terminals



Rail Inter-modal Yards



Airport



Connected by an increasingly congested urban road network

Roberts Bank Terminals

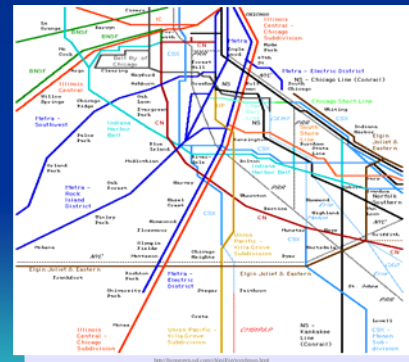


Fraser River Terminals



## Example: Chicago Rail Yards

- 74 rail yards, 17 for intermodal
- delays at 600 grade crossings
- Congestion from truck trips moving cargo from yard to yard
- Abandoned & under-utilized rail yards



## Inland Ports

- **European Container Terminal Venlo**

- 120 miles from Rotterdam
  - daily shuttle trains



- **Virginia Inland Port**

- 220 miles from Hampton Roads
  - daily shuttle trains



- **Nilai Inland Port (Kuala Lumpur)**

- 25 miles from Port Klang
  - daily shuttle trains

# Port Inland Distribution Network



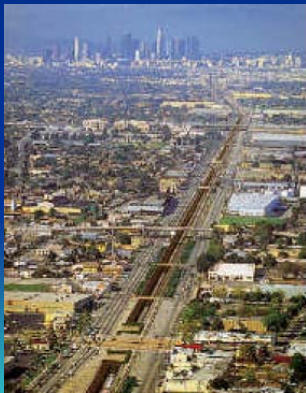
## Rail Service to Satellite Facilities

### **Betuweroute Freight Line**

100 miles

Netherlands port to Germany

Shuttle trains



### **Alameda Corridor**

20 miles (future 55 miles)

San Pedro Ports to Los Angeles

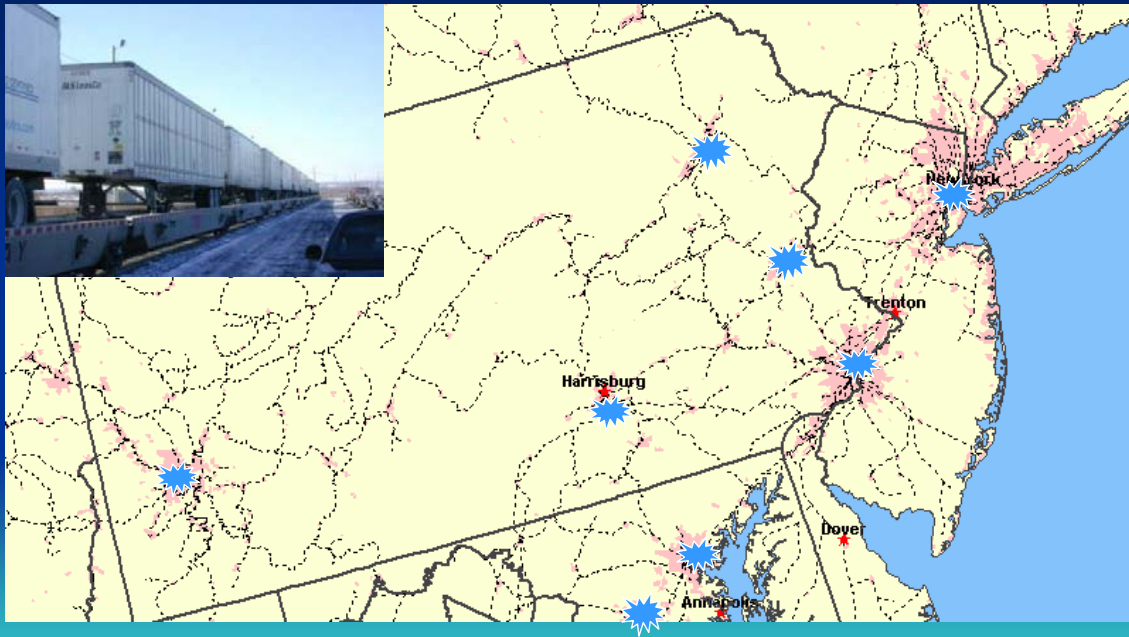
Shuttle trains

## 3. Economic Development

- Business growth & attraction depends on many cost, quality and market size factors.
- Freight connections alone do not create economic development.
- But failure to provide access or service can constrain it.
- International trends will create more opportunities for intermodal services.



# PA – Rail Intermodal Terminals



(Pittsburgh, Harrisburg, Scranton, Allentown, Philadelphia)

# Local Econ Assessment Package

**Summary Comparison of Factors** ?

	Study Area	Comparison Area
	NY	NY & PA
<b>Cost Factors (as labeled)</b>		
Average Labor Cost (per year in RETAIL)	\$22,993	\$22,493
Average Electricity Cost (\$/kWh)	\$0.10	\$0.08
Average Total Tax Burden per Person (\$ per year)	\$1,199.45	\$439.91
Average Housing Cost (\$ for a single family home)	\$64,000	\$85,300
Average Rental Cost (\$ per month)	\$339.00	\$360.00
<b>Market Factors (as labeled)</b>		
Population	137,143	280,844
Population Density (population per square mile)	129.1	350.2
Skilled Workers (% with bachelor's degree or higher)	16.90%	20.90%
Population Within 40 Minutes	53,272	122,406
<b>Transportation (access in avg. minutes peak period)</b>		
Access to Commercial Airport	18	19
Access to Freight Marine Port	92	9
Access to Rail Intermodal Loading	75	97
Average MPH Travel Speed	69	20
Airport Annual Operations	2,979	14,493
<b>Technology &amp; Education Quality (1-10)</b>		
Labor: Advanced Skills Training (not active)		
Broadband Access		
<b>Development Constraints &amp; Incentives (1-10)</b>		
Availability of Highway-Related Commercial Land		
Availability of Industrial Park Sites with Full Infrastructure		
Availability of Office/Commercial Development Sites		

<a href="http://www.eur-leap.com/?type=Ranking&amp;ana...">http://www.eur-leap.com/?type=Ranking&amp;ana...</a>	
<b>Chautauqua County - Nearest Rail Intermodal Facility:</b>	
Cr Buffalo Tofc/Cojc	
Longitude: -78.82    Latitude: 42.88	
Driving Time: 75 minutes	
Miles: 63.6	

# LEAP: Barriers to Econ Devel

## Barriers Factors by Industry (1=Critical, 2=Important)

Performance Measurement = Employment  
Actual Number of Jobs

NAICS	Sector	Potential Attraction	Prod Cost	Labor Cost	Land Cost	Energy Cost	Tax Cost	Work Force	Labor Skill	Hwy Trans	Rail Trans	Air Trans	Water Trans	Broad Band
115	Support for Agriculture & Forestry	170	2	-	-	-	-	-	-	-	-	-	-	-
323	Printing & Related Support Activities	177	1	-	-	-	-	-	2	-	-	-	-	-
325	Chemical Manufacturing	104	-	-	-	-	-	-	1	-	2	-	-	-
332	Fabricated Metal Products	229	1	-	-	-	-	-	-	-	-	-	-	-
333	Machinery Manufacturing	387	1	-	-	-	-	-	2	-	-	-	-	1
334	Computer & Electronic Products	518	1	-	-	-	-	-	2	-	-	-	-	1
335	Electric Equipment, Appliances, etc.	92	1	-	-	-	-	-	2	-	-	-	-	1
339	Miscellaneous Manufacturing	153	1	-	-	-	-	-	2	-	-	-	-	-
420	Wholesale Trade	2,273	1	2	-	-	-	2	2	2	-	-	-	1
481-487	Transportation	3,580	-	-	-	-	-	-	-	-	-	-	2	1
491-493	Mail, package delivery & warehousing	240	1	2	-	-	-	2	-	2	-	-	-	1
511	Publishing Industries (except Internet)	1,270	1	-	-	-	-	-	2	-	-	-	-	-

## PA – Rail Freight & Development

- **Rail Freight Properties Directory** (205 listings)
- **Rail Freight Assistance Program** (track, bridge, siding, spurs for industrial development)
- **Intermodal Warehousing & Logistics Centers**
- **Int. Port Connections** (e.g., reverse logistics for military equip. repair (Phila to Ft. Drum, Dix...), future PIDN to Pittsburgh, etc.)

## Future: Public-Private Cooperation

<u>Element</u>	<u>Leadership</u>	<u>Support</u>
Rail capacity limits	Rail Carriers	
Rail capacity investment needs	Rail Carriers	Public Agency
Freight market projections	FAC & Public Agency	Rail Carriers
Trans-modal effects of investment	Public Agency	Rail Carriers
New market assessments	Public Agency	FAC & Rail Carriers
Public education	Public Agency	Freight Advisory Council
Environment	Public Agency	
Multi-jurisdiction coordination	Rail Carriers	Public Agency
Media coordination	Public Agency	FAC & Rail Carriers